

IN THE CLAIMS

1-14. (cancelled)

15. (original) A processing system for processing operations associated with thermal attributes, comprising:

a first operation having a first thermal attribute exceeding an operating threshold;

a second operation having a second thermal attribute not exceeding the operating threshold; and

a processor for executing the first and second operations, the processor having a thermal threshold;

wherein, if the thermal threshold of the processor is not exceeded, the processor selects the first operation for processing, and

if the thermal threshold of the processor is exceeded, the processor selects the second operation for processing.

16. (original) The system of claim 15, wherein, if the thermal threshold is not exceeded, and if the first operation is not available, then the processor is operable to obtain and execute the second operation.

17. (original) The system of claim 16, wherein, if the second operation is not available, then the processor is operable to idle for a predetermined period of time.

18. (original) The system of claim 15, further comprising:

a plurality of priority queues, each of the priority queues including a first queue and a second queue, the first queues for storing the first operation and the second queues for storing the second operation.

19. (original) The system of claim 18, wherein a first one of the priority queues is a high priority queue, a second one of the priority queues is a medium priority queue, and a third one of the priority queues is a low priority queue.

20-36. (cancelled)

37. (original) A processing apparatus for processing operations, comprising:

a first operation having a first thermal attribute not meeting a condition;

a second operation having a second thermal attribute meeting the condition; and

a processor for executing the first and second operations, the processor comprising a processing element, a processing unit or a sub-processing unit and having a thermal threshold;

wherein, if the thermal threshold of the processor is not exceeded, the processor selects the first operation for processing, and

if the thermal threshold of the processor is exceeded, the processor selects the second operation for processing.

38. (original) The processing apparatus of claim 37, wherein, if the thermal threshold is not exceeded, and if the first operation is not available, then the processor is operable to obtain and execute the second operation.

39. (original) The processing apparatus of claim 38, wherein, if the second operation is not available, then the processor is operable to idle for a predetermined period of time.

40. (original) The processing apparatus of claim 37, further comprising a plurality of priority queues, each of the priority queues including a first queue and a second queue, the first queues for storing the first operation and the second queues for storing the second operation.

41. (original) The processing apparatus of claim 40, wherein a first one of the priority queues is a high priority queue, a second one of the priority queues is a medium priority queue, and a third one of the priority queues is a low priority queue.

42. (original) The processing apparatus of claim 37, wherein the processor comprises the sub-processing unit, and the sub-processing unit includes a floating point unit, an integer unit and a register associated with the floating point unit and the integer unit.

43. (original) The processing apparatus of claim 42, wherein the sub-processing unit further includes a local store.

44. (new) The system of claim 15, wherein the first and second thermal attributes are based on a power density of the processor.

45. (new) The system of claim 44, wherein the processor includes a plurality of subcomponents, and the power density is based on a physically related group of the subcomponents.

46. (new) The system of claim 44, wherein the processor includes a plurality of subcomponents, and the power density is based on a logically related group of the subcomponents.

47. (new) The system of claim 15, wherein the first and second thermal attributes are based on an amount of heat generated over a period of time by the processor.

48. (new) The processing apparatus of claim 37, wherein the first and second thermal attributes are based on a power density of the processor.

49. (new) The processing apparatus of claim 37, wherein the first and second thermal attributes are based on an amount of heat generated over a period of time by the processor.

50. (new) The processing apparatus of claim 42, wherein the first and second thermal attributes are based on a power density of the processor, and the power density is based on a physically related group of one or more of the floating point unit, the integer unit and the register.

51. (new) The processing apparatus of claim 42, wherein the first and second thermal attributes are based on a power density of the processor, and the power density is based on a logically related group of one or more of the floating point unit, the integer unit and the register.